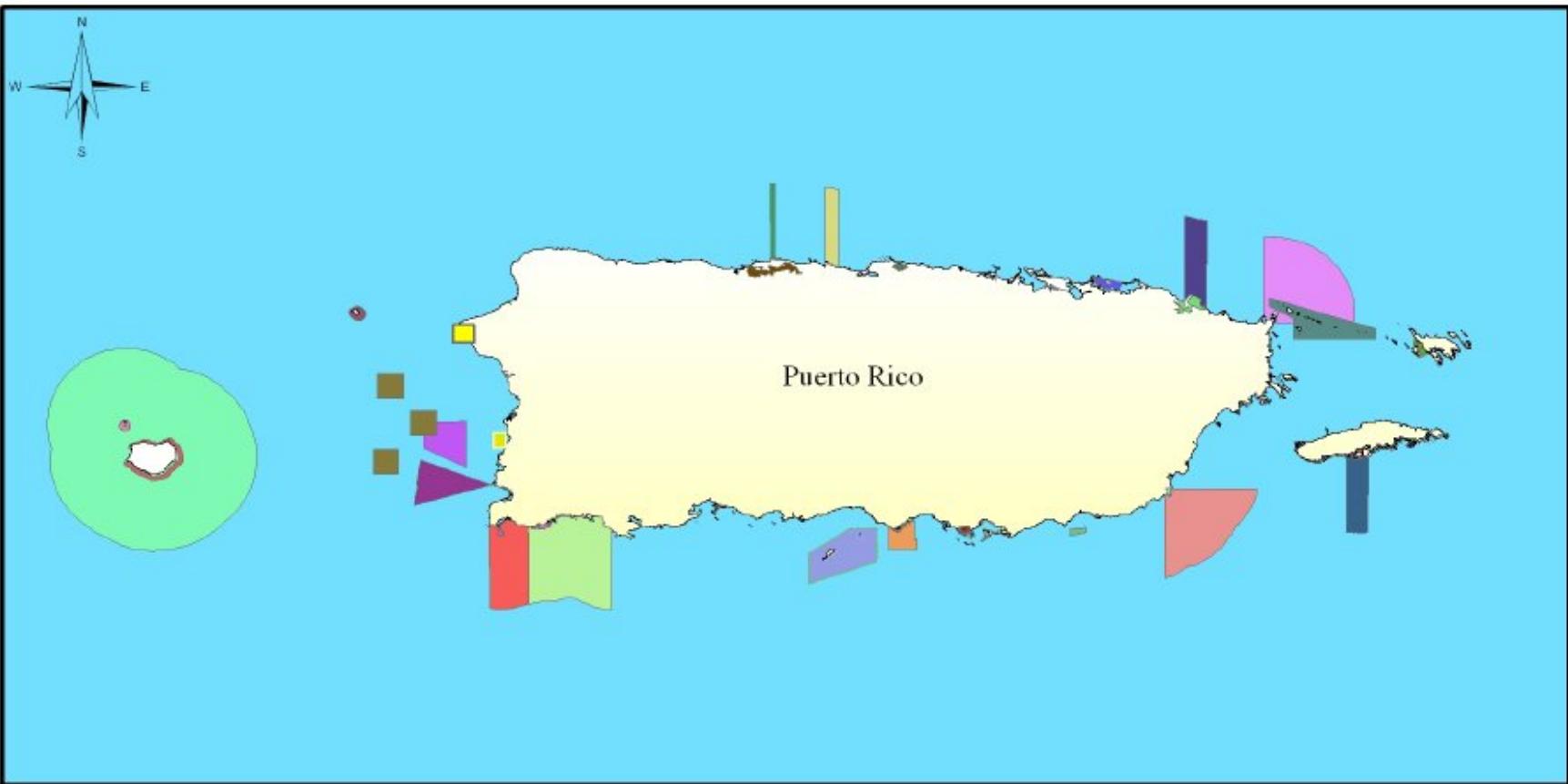




MPAs in Puerto Rico Lessons Learned

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University of Puerto Rico at Mayaguez

MPA of Puerto Rico



Legend

Reserva Isla Desecho	Ext. Marina Reserva Natural Punta Petrona	Reserva Natural Caño Martín Peña
EE de Aguirre	Ext. Marina Reserva Natural Punta Yeguas	Reserva Natural Caño Tiburones
EE de Ceiba	Mona	Reserva Natural Cueva del Indio
EE de Piñones	Reserva Marina Tres Palmas	Reserva Natural Espíritu Santo
CPMC_NTZ_Sectorial	Reserva Nacional Estuarina Bahía de Jobos	Reserva Natural La Parguera
Ext. Marina R.N. Bahía Bioluminiscente de Vieques	Reserva Natural Arrecifes La Cordillera	Reserva Natural Pantano de Cibúco
Ext. Marina Reserva Natural Boquerón	Reserva Natural Arrecifes Tolumníne	Reserva Natural Punta Petrona
Ext. Marina Reserva Natural Cabezas de San Juan	Reserva Natural Arrecifes de Chayama	Reserva Natural Punta Tuna
Ext. Marina Reserva Natural Cueva del Indio	Reserva Natural Bahías Bioluminiscentes de Vieques	Reserva Natural Punta Yeguas
Ext. Marina Reserva Natural Espíritu Santo	Reserva Natural C.L. Peña	Reserva Natural del Bosque Estatal de Boquerón
Ext. Marina Reserva Natural Hacienda La Esperanza	Reserva Natural Caja de Muertos	Zona de No Pesca Mona
Ext. Marina Reserva Natural Isla Caja de Muertos	Reserva Natural Cayo Ratones y Aguas Adyacentes	Zona de No Pesca Monito
Ext. Marina Reserva Natural Punta Guaniquilla	Reserva Natural Caño Boquilla	Mona Land

Experiences

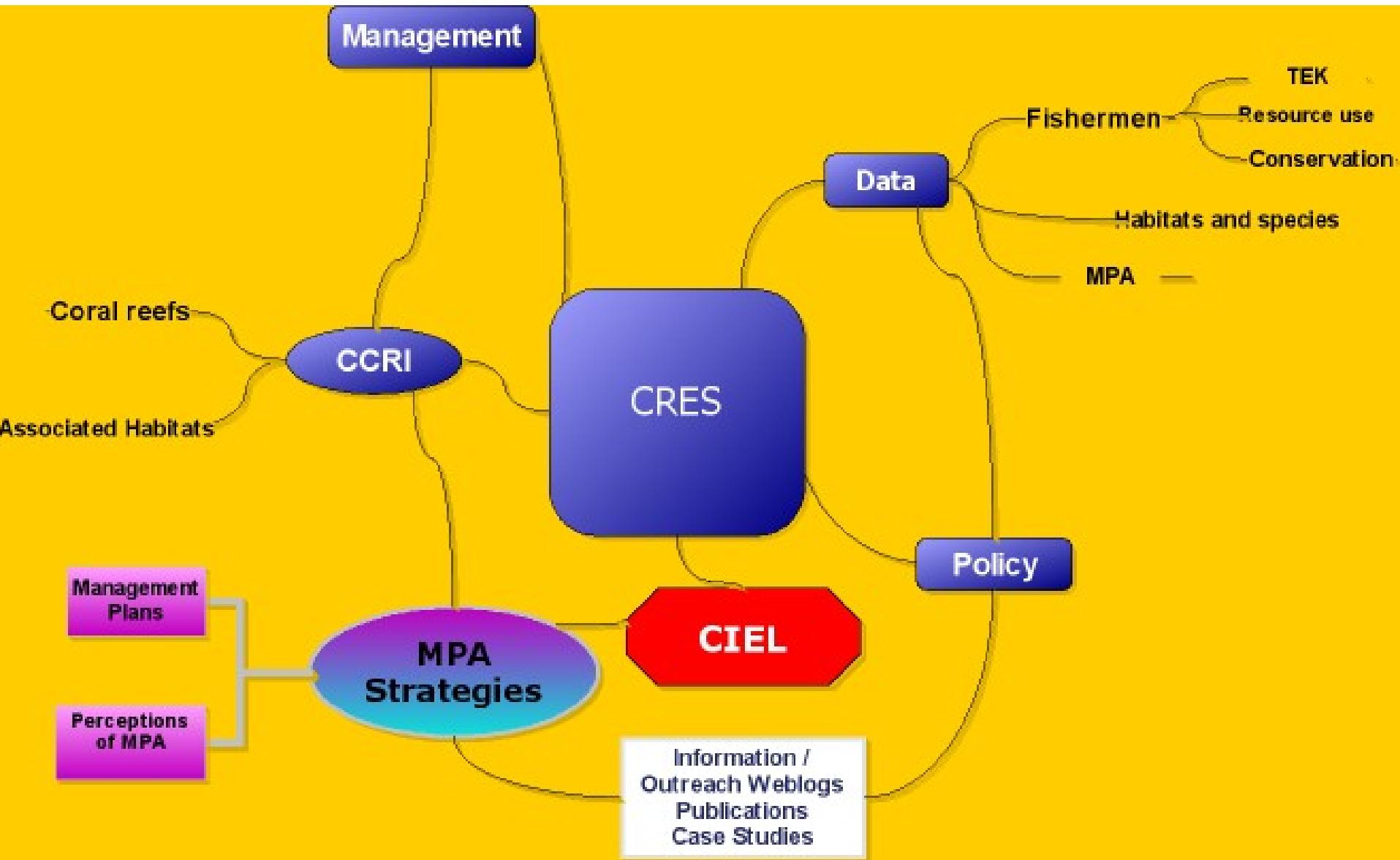
- La Parguera: Turrumote
- Canal Luis Peña, Culebra (No-Take)
- Tres Palmas, Rincón
- Puerto Rico Conservation Trust

Rules of thumb

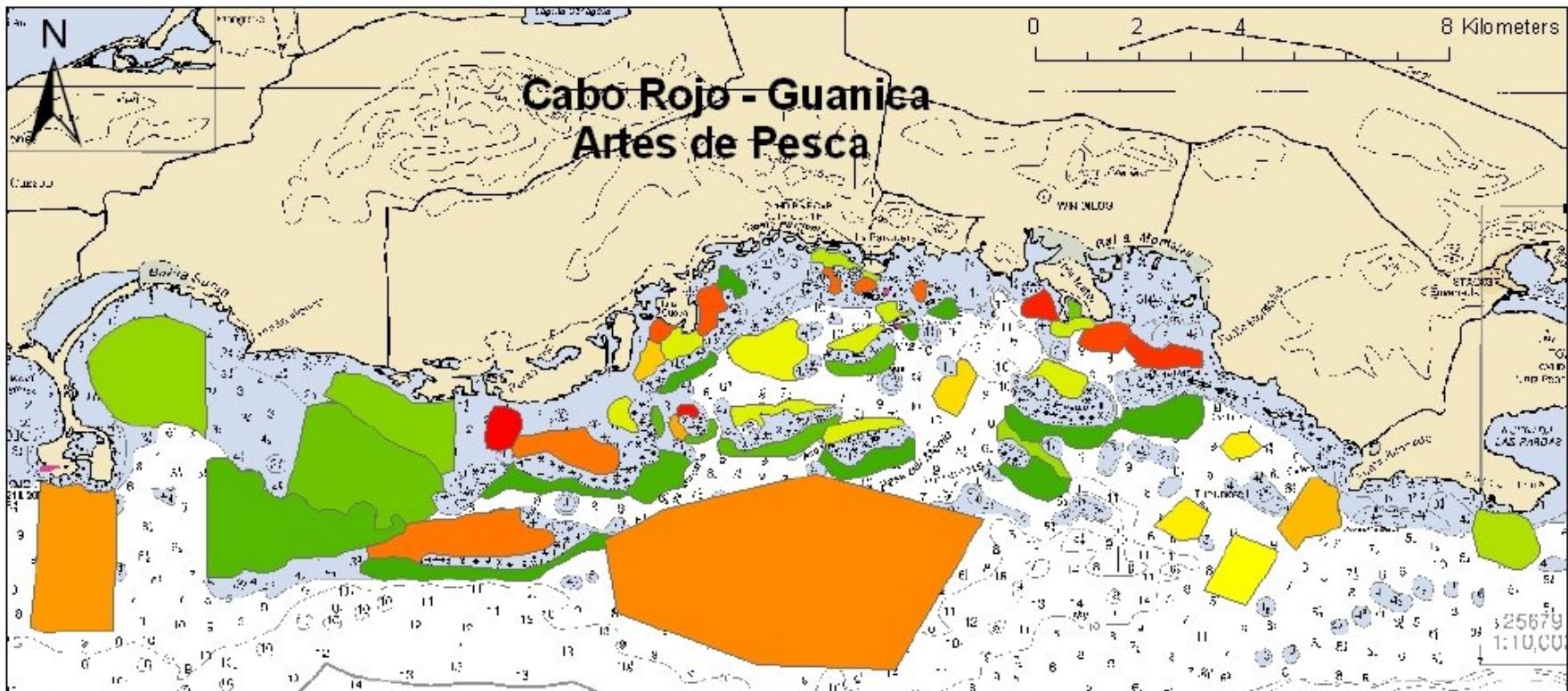
- Case studies
- A well structured plan
- Capacity building for co-management
- History: consumption, labor, policies, regional processes
- Resource use and traditional ecological knowledge (TEK)
- Policy and institutional arrangements
- Language and concepts
- Identification of stakeholders, issues and problems
- Appropriate forms of engagement
- Engagement of the community through education

Key Programs

- Coral Reef Ecosystem Studies (NOAA)
- Caribbean Coral Reef Institute (NOAA and the UPR at Mayaguez)
- UPR Sea Grant



Mapping Fishing Areas



Artes_Pesc

- [Green Box] Filete/ Nasa Ahogada/ Fondo
- [Green Box] Buceo
- [Green Box] Buceo/ Nasa Ahogada
- [Green Box] Buceo/ Nasas
- [Green Box] Buzos
- [Green Box] Buzos/ Trasmallo/ Nasas
- [Green Box] Chinchorro
- [Green Box] Chinchorro/ Arrastre/ Nasa Ahogada
- [Green Box] Chinchorro/ Nasas
- [Green Box] Cordel

Corrida

Corrida de Fondo

Filete

Filete/ Nasa Ahogada

Fondo/ Nasal/ Filete

Mayorquin Fondo

Nasa/ Buceo Fondo

Nasa/ Filete

Nasa/ Trasmallo

Nasas

Nasas con boyas

Nasas/ Corridas/ Buzos

Rastreal/ Mayorquin/ Nasa (Boyas)/ Fondo

Redes/ Nasa Ahogada

Trasmallo

Trasmallo/ Chinchorro/ Nasa Ahogada

Trasmallo/ Corrida

Trasmallo/ Nasa Ahogada

Trasmallo/ Nasa Ahogada/ Chinchorro

Trasmallo/ Nasa Ahogadas

Trasmallo/ Nasas/ Fondo

Local Ecological Knowledge: Diving Operators and the Health of Coral REefs

Coral species reduced in coverage and their location

Species	Common name	Location
<i>Diplora strigosa</i>	Brain coral (7)*	Cayo Ratones, Escollo El Negro, El Natural, La Parguera
<i>Acropora palmata</i>	Elkhorn coral (5)	Turrumote, Escollo El Negro, Desecheo Island, La Parguera
<i>Gorgonia</i> sp.	Sea fans (3)	El Natural and Desecheo Island
<i>Acropora cervicornis</i>	Staghorn coral (3)	La Parguera, Mona Island, Desecheo Island and Escollo El Negro
<i>Porites porites</i>	Finger coral (2)	Las Cuevas and Fajardo
<i>Acropora</i> spp. (Species not specified)	Staghorn and Elkhorn coral	Cayo Ratones and Escollo El Negro
<i>Antipathes</i> spp.	Black coral	Guánica to La Parguera
<i>Porites astreoides</i>	Mustard hill coral	La Parguera
<i>Montastrea cavernosa</i>	Great star coral	La Parguera
<i>Millepora complanata</i>	Fire coral	Las Cuevas and Crashboat

Reefs visited the most by SCUBA Diving Operators and Instructors

Reef site	%
Escollo El Negro	11
El Tourmaline	8
Desecho Island	8
El Ron	5
Fallen Rock	5
Turrumote I	5
Mona Island	5
El Natural (Crashboat)	5
Cayo Enrique	5
Playa Bajuras	3
Playuela	3
Monito	3
North of Punta Ensenada (Rincón)	3
Caracoles	3
Media Luna	3
Bajo Gallardo	3
El Faro (Cabo Rojo)	3
Manchas Negras	3
Sector Las Cuevas	3
Quebrada de los Cedros	3
The Black Wall	3
The Hatchery	3
Los Pozos	3
Pablo	3

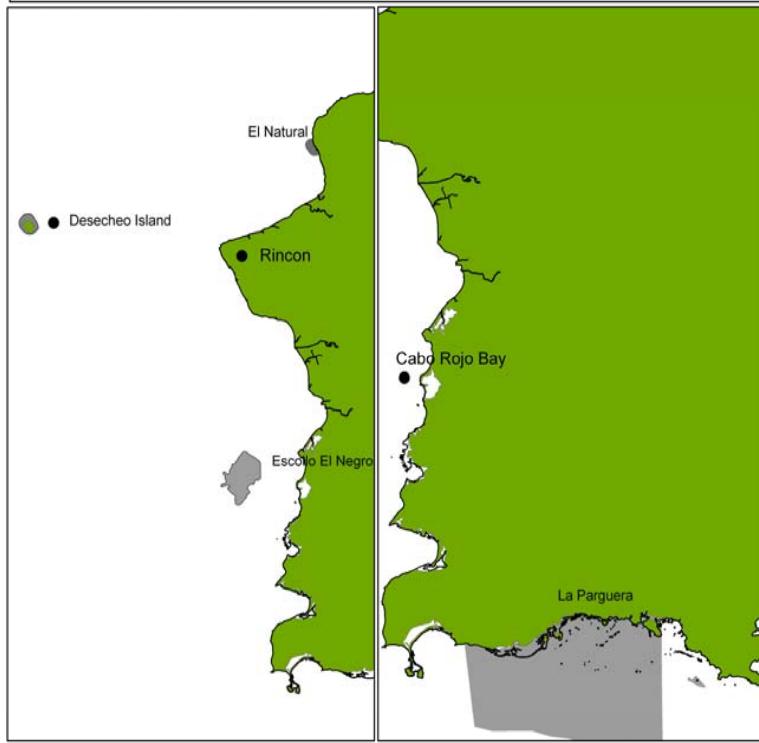
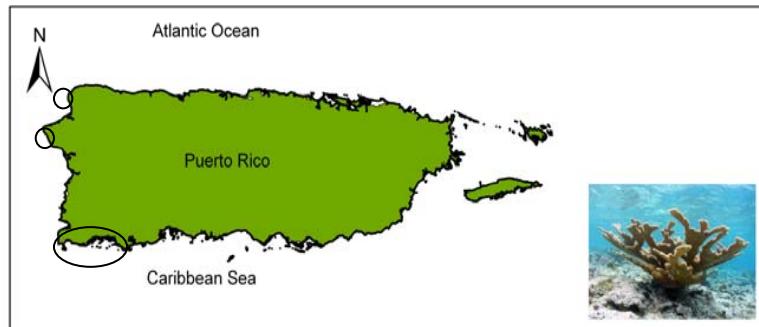


Figura ?. *Acropora palmata* species reduced in terms of coverage and the location.

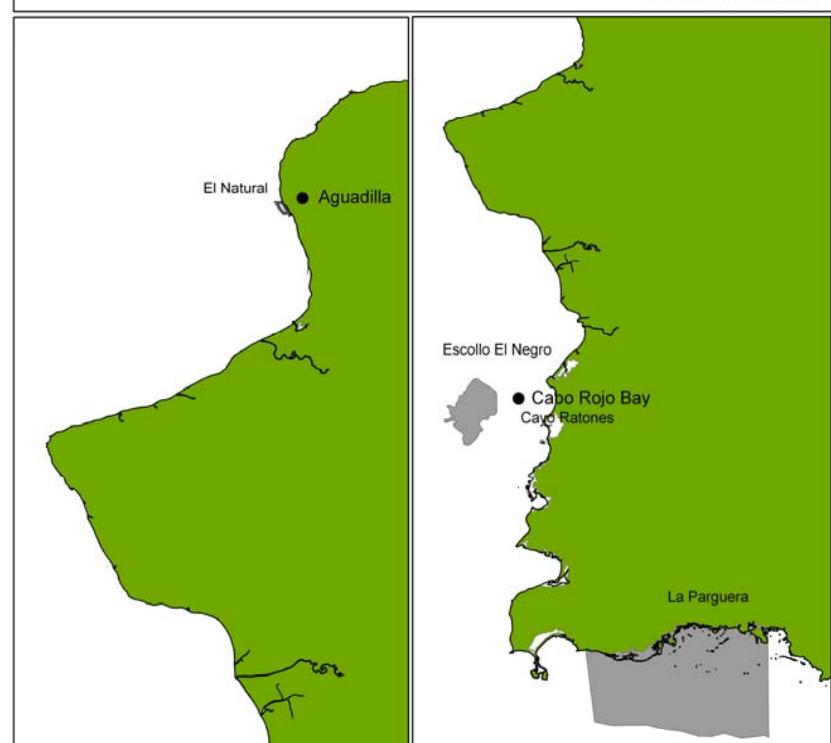
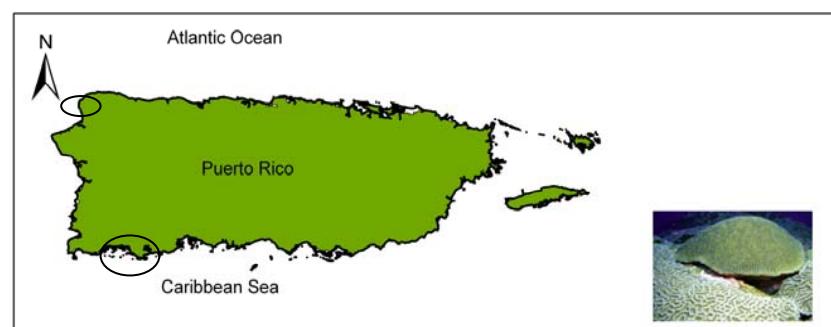
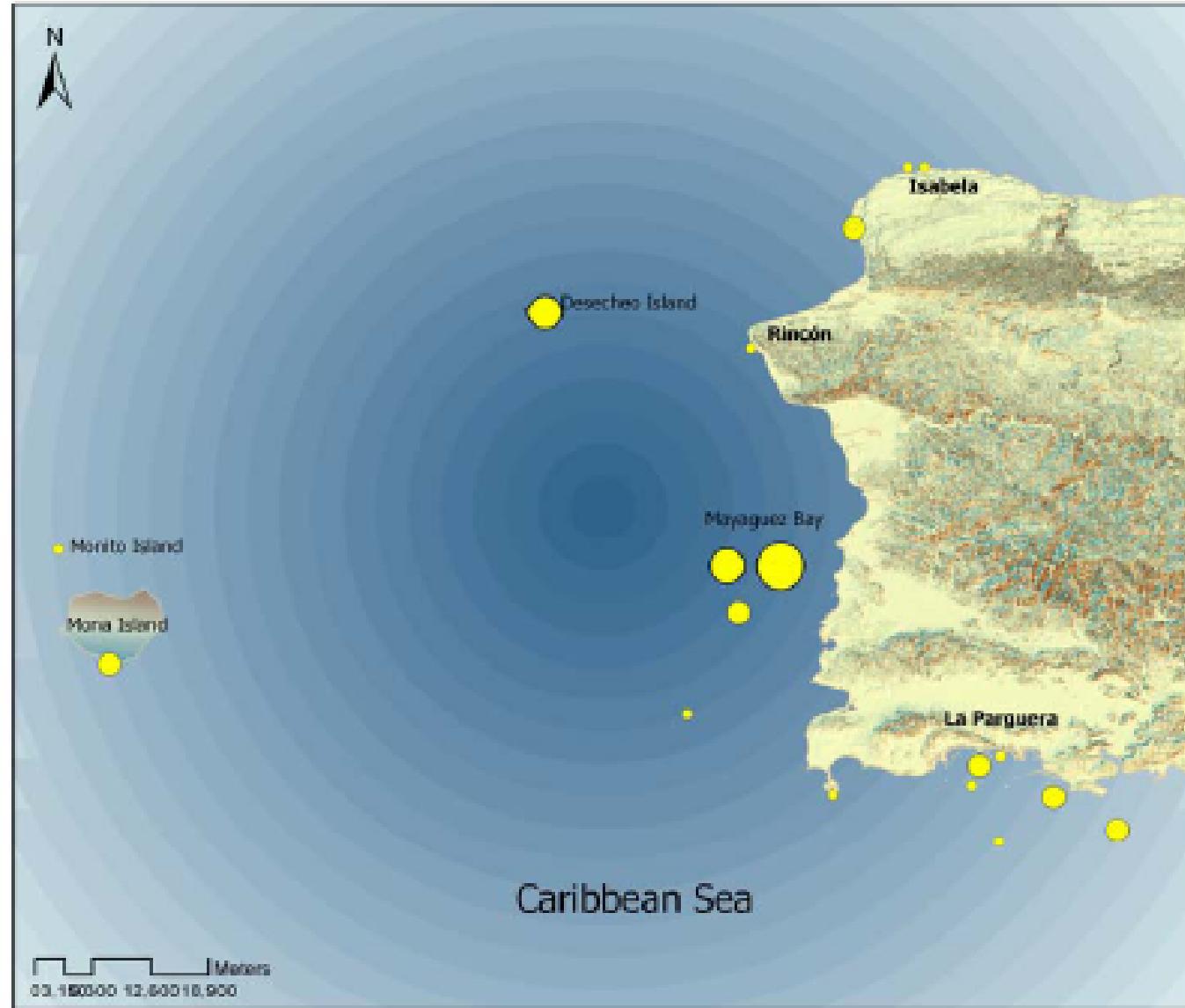


Figura ?. *Diploria strigosa* species reduced in terms of coverage and the location.



Most visited

- 3
- 4 - 5
- 6 - 8
- 9 - 11



Monito Island



Mona Island

Desecheo Island

Rincón

Mayagüez Bay

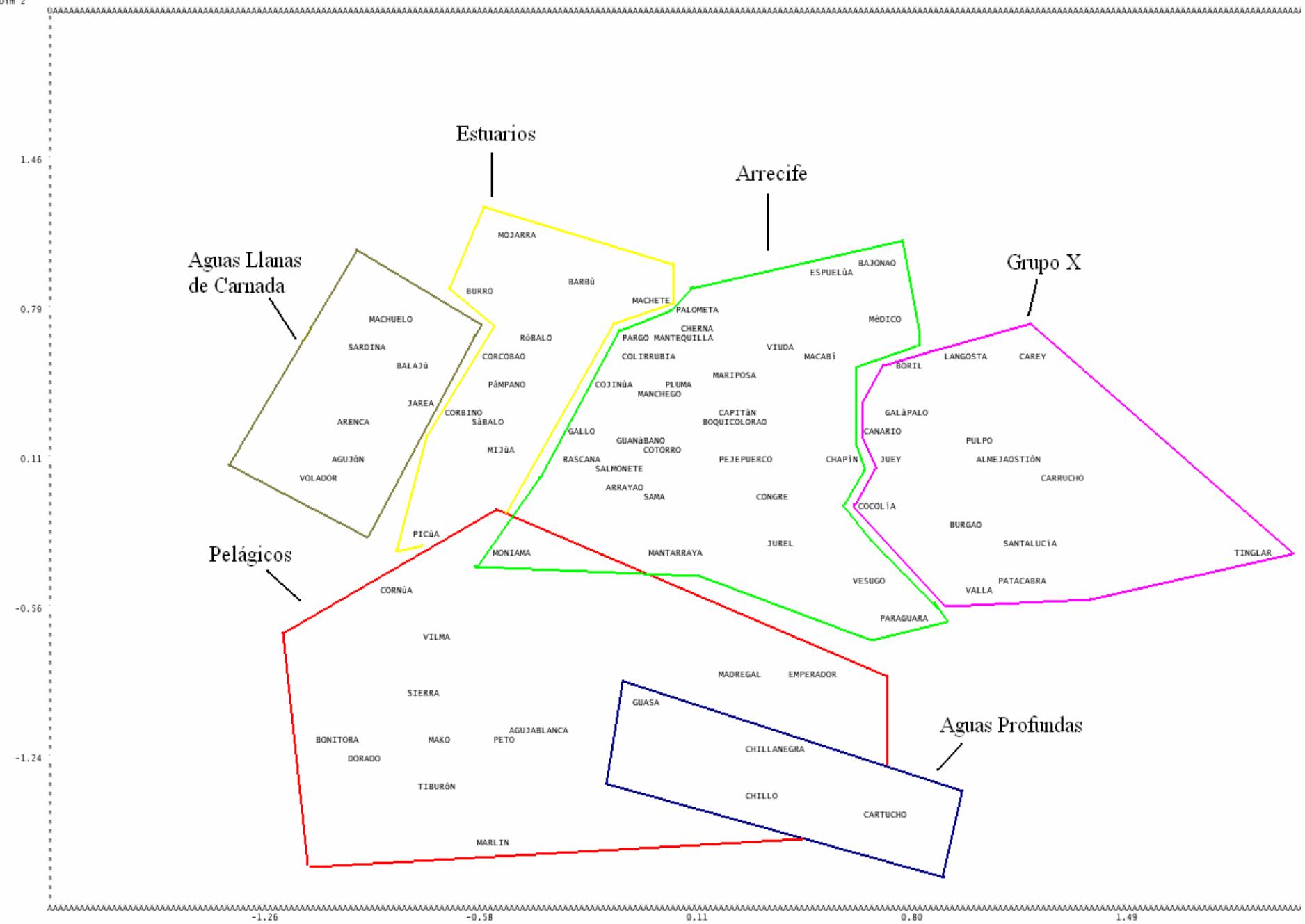
Isabela

La Parguera

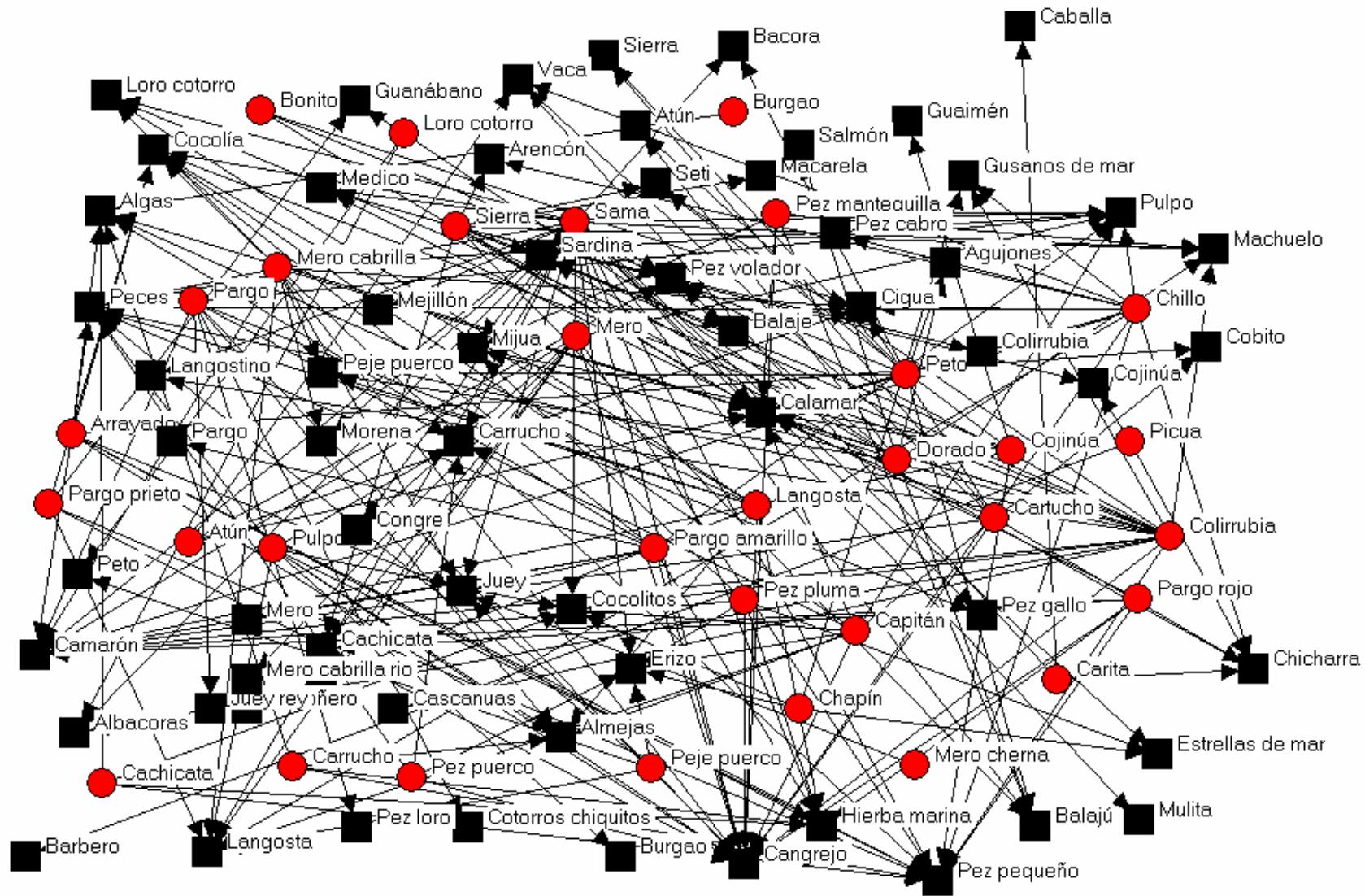
Caribbean Sea

03.150000 12.50018.900 Meters

Traditional Ecological Knowledge: Fishers' Cognition of Species

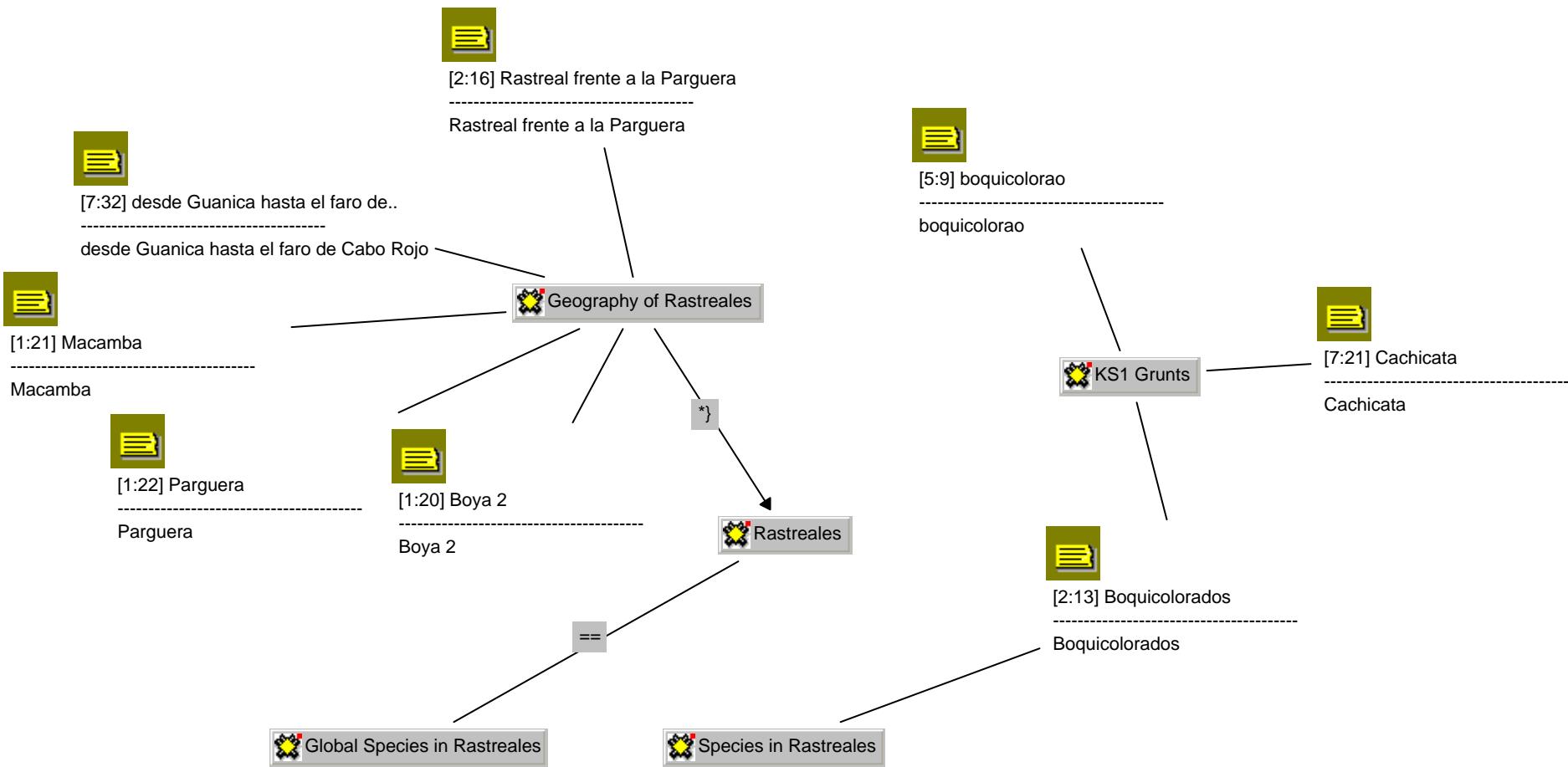


Predator-prey relationships

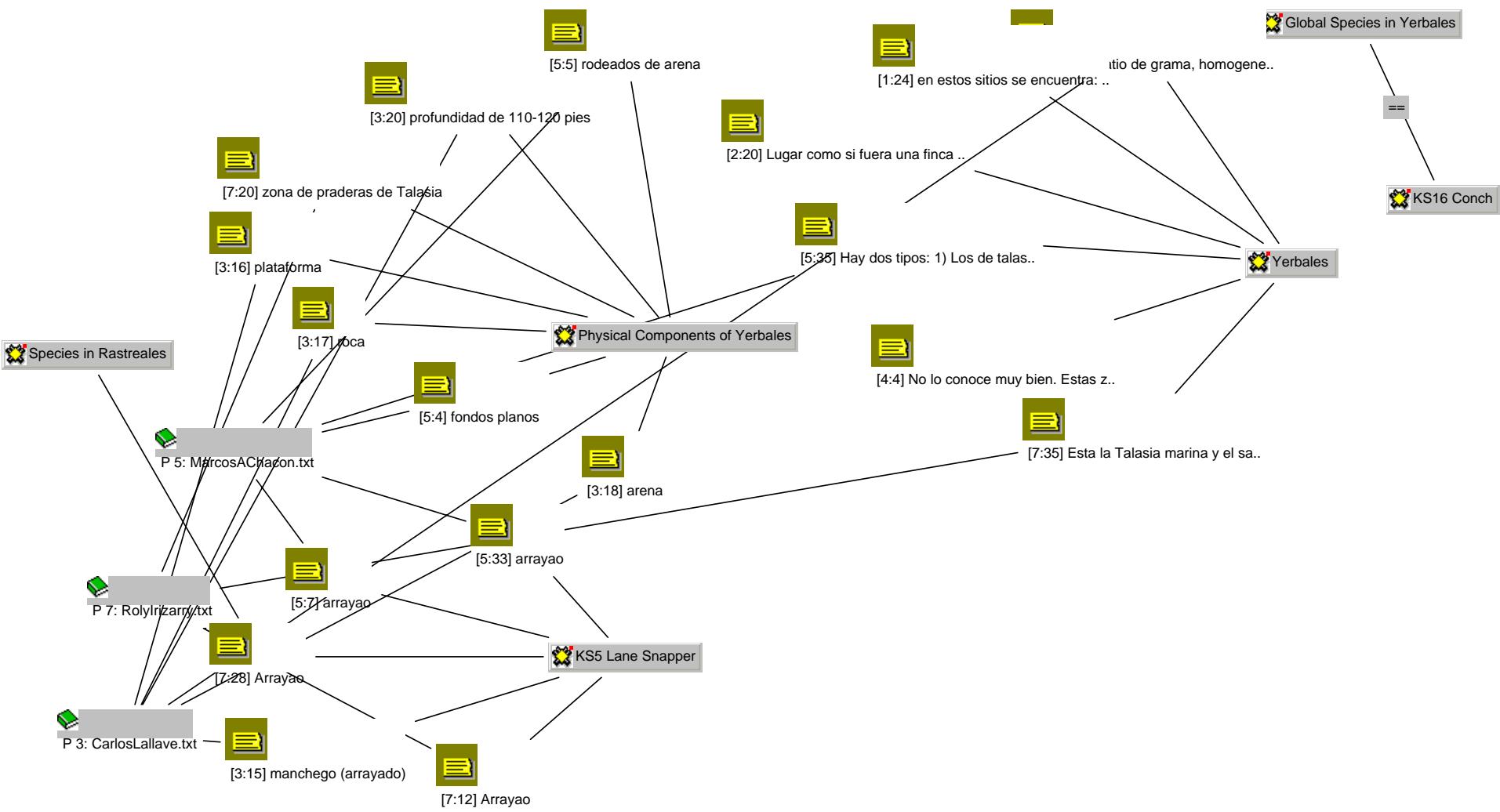


Traditional Ecological Knowledge: Fishers' Perceptions of Habitats

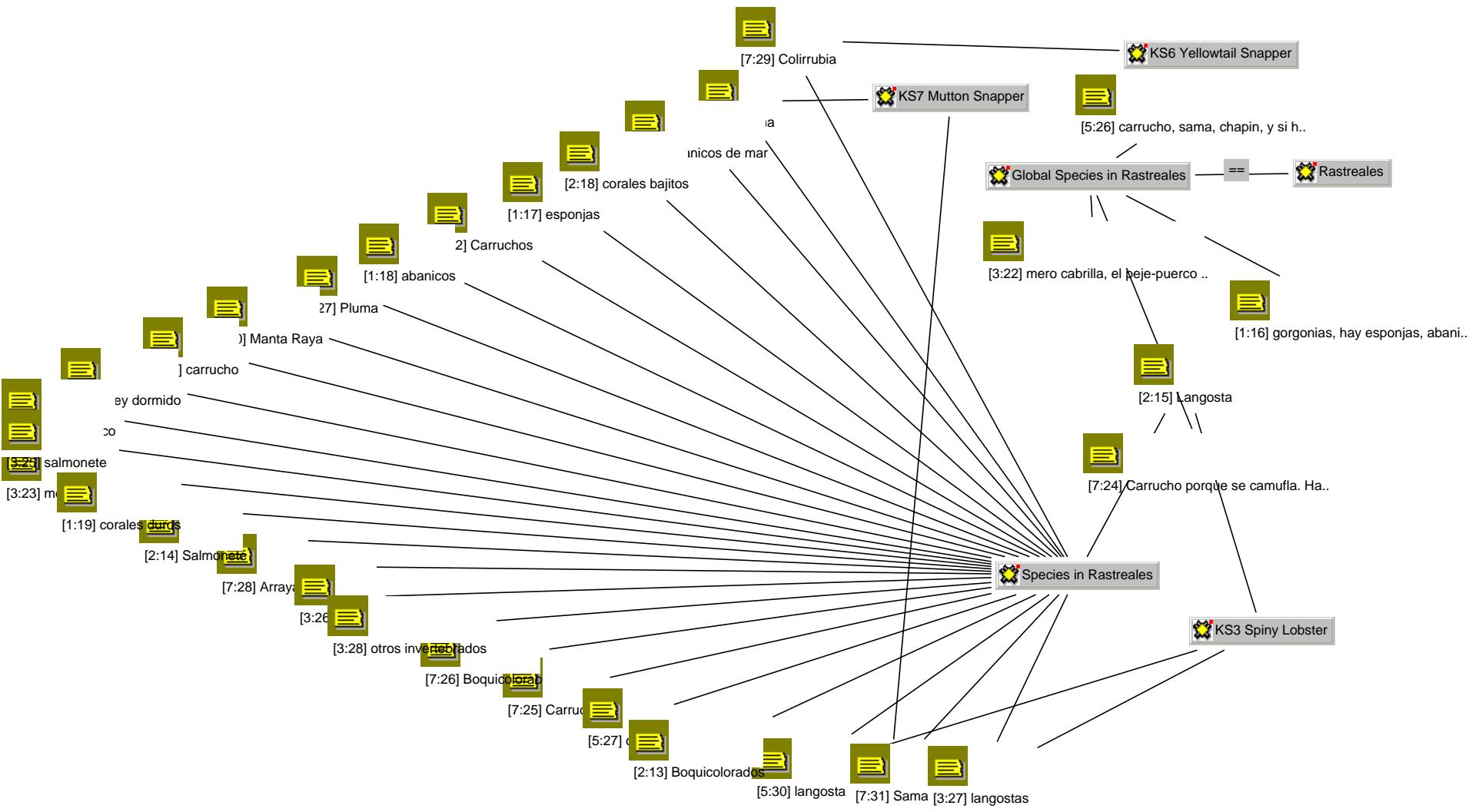
Rastreales



Yerbales



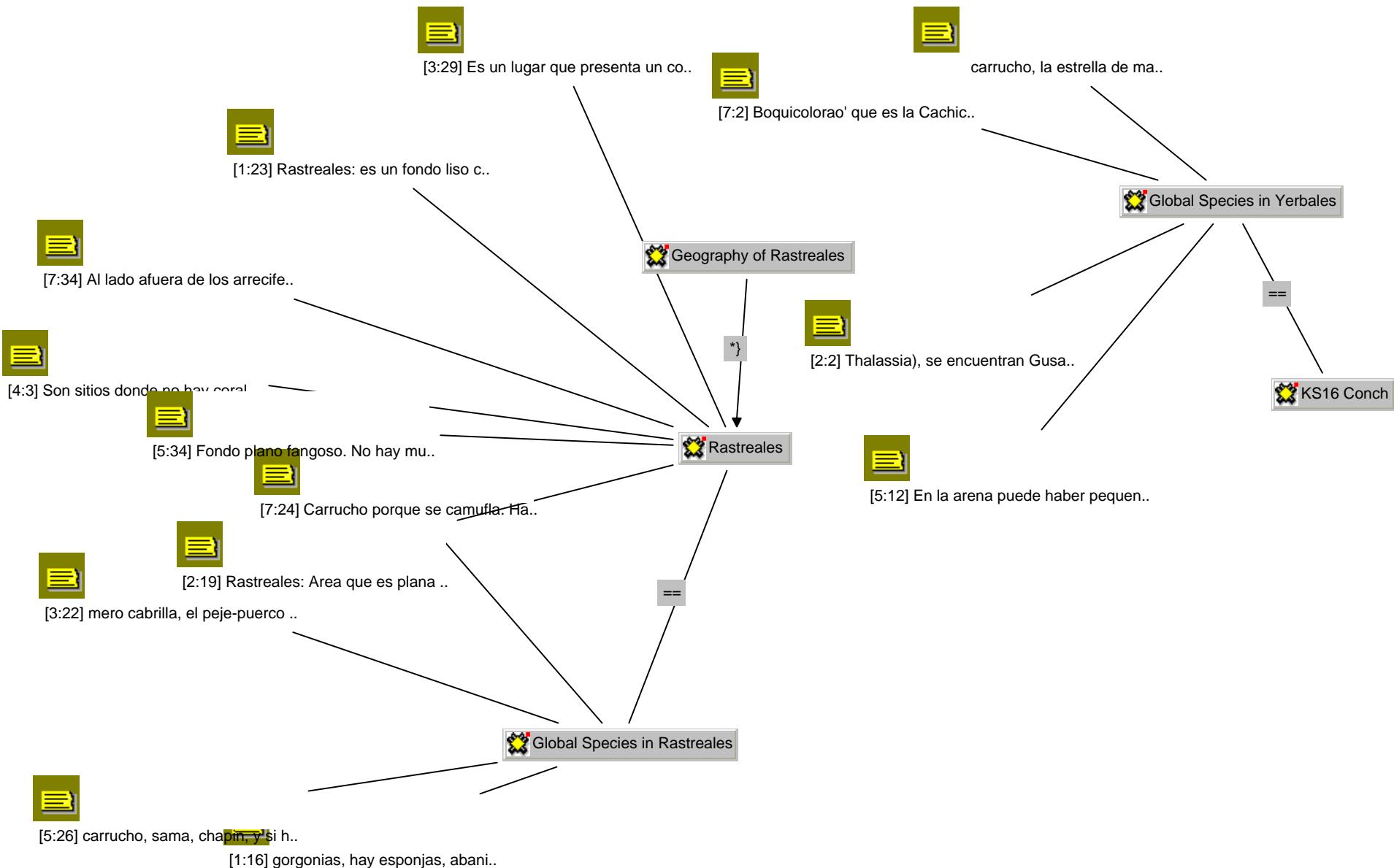
Species in Rastreales



Geography of yerbales

- 1:6 Pitahaya (22:22)
- 1:7 Boya 2 (22:22)
- 1:8 Punta Aguila (15:15)
- 1:9 el Bajo (15:15)
- 1:10 Bahia Salinas (14:14)
- 1:11 La Finca (18:19)
- 1:12 Los Tiburones (19:19)
- 1:13 Boya 8 (19:19)
- 1:14 Boya 6 (19:20)
- 2:3 Tres con Raya (16:16)
- 2:4 Maria Burdeo (16:16)
- 3:12 Las manchas (25:26)
- 3:13 El Negro (26:26)
- 3:14 Cayo Ron (26:26)
- 5:13 El yerbal que es de fideillo, .. (33:34)
- 5:17 Ventana (38:38)
- 5:18 Cayo El Rabon (38:39)
- 5:19 Playa Ballena (39:39)
- 5:20 Cana Gorda (39:39)
- 5:21 Punta de Brea (39:39)
- 5:22 El Encorcobado (39:40)
- 7:3 Bahia de Jobos (24:24)
- 7:4 Guayanilla (24:24)
- 7:5 Parguera esta llena de yerbale.. (24:24)
- 7:6 Combate (25:25)
- 7:7 Pitahaya (25:25)

Rastreales and yerbales



Support to NOAA and the Department of Natural and Environmental Resources (DNER) in the design of a strategy for priorities in the development and implementation of management plans for MPA.

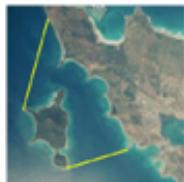
A set of priorities was developed.



First Draft of the Management Plan for the Luis Peña Marine Reserve (a no-take reserve) in Culebra.

In collaboration with Sea Grant, DNER, the municipality and the local NGOs.

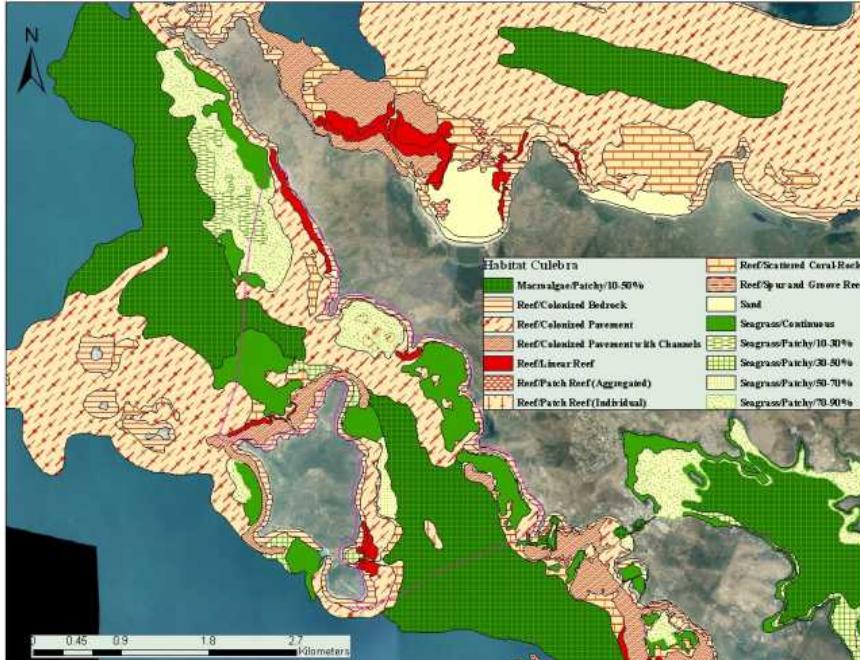
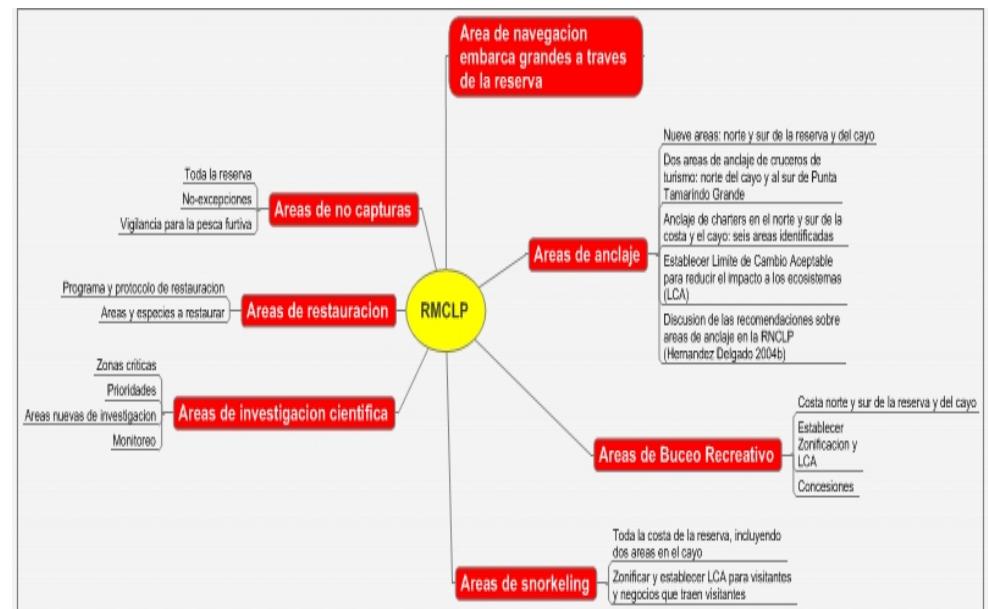
Plan de Manejo de la Reserva Natural Canal Luís Peña, Culebra



Documento base para el plan de manejo
Primer Borrador

Culebra, Puerto Rico
Octubre 28 de 2005





A bilingual (Spanish and English) web log on MPA in Puerto Rico and the conservation of coral reefs and the local fisheries: <http://www.amp-pr.org/blog> (supported by CCRI and the College of Arts and Sciences, UPR-Mayagüez, data from CRES).

Áreas Marinas Protegidas en Puerto Rico y el Gran Caribe

Ventana hacia el arrecife coralino / Window into the coral reefs

February 14th, 2006



Publicado por Alfonso Aguilar-Perera

Si desea echar una Mirada al arrecife coralino en tiempo real y durante el día, puede visitar este [enlace](#); cortesía del [Instituto Perry para la Ciencia Marina](#), en Las Bahamas. Este Instituto, con sede en Florida y con una estación biológica en Las Bahamas, desde 1970, está haciendo y apoyando investigación científica y educación innovadora en pro de los arrecifes coralinos.

If you like to take a look at the coral reef in real time and during daylight, you may visit this [link](#); courtesy of the [Perry Institute for](#)

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27	28					

« Jan

Reserva Marina Tres Palmas - Rincón, Puerto Rico



Leyenda-Key

- Reserva Marina Tres Palmas
Designado: Enero 2004
- Filón Coralino de Cuerno de Alce
(Elkhorn Coral Reef)
- Área de Anidaje de Tortugas
(Turtle Nesting Sites)
- Área de Apareamiento y Lactancia
de Ballenas (Whale Breeding Area)
- Parque de Observación de Ballenas y El
Faro (Whale Watch Park & Lighthouse)
- Recurso Recreativo (Surfing)
- Ruta Escénica (Zoned Scenic Route)



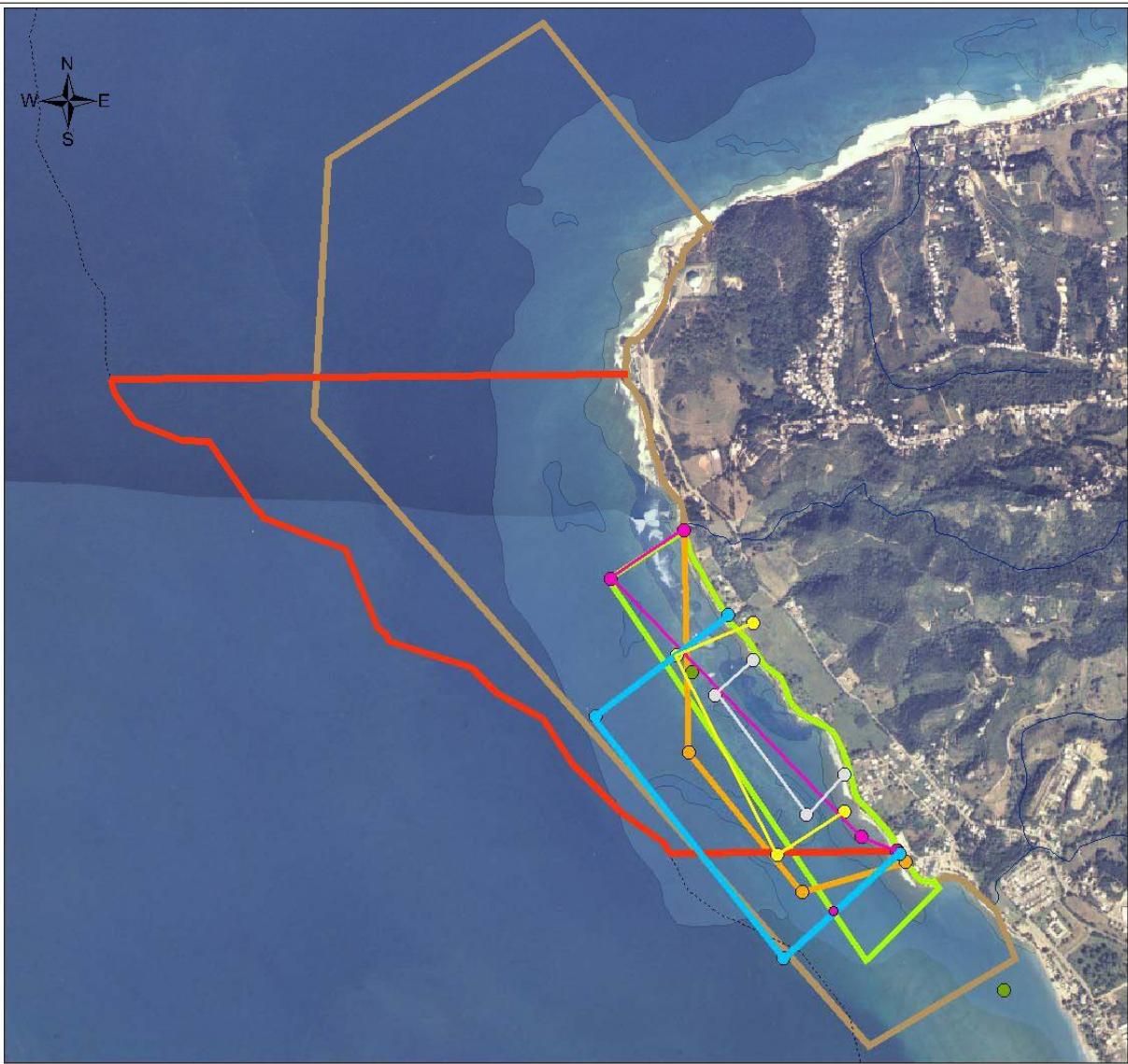
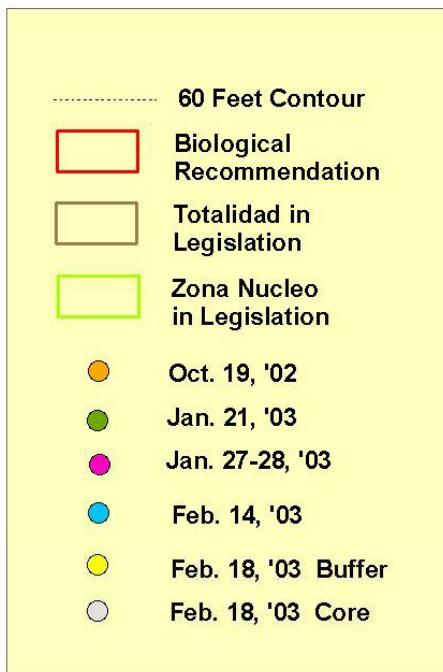
Apoyado por: Ciudadanos de Rincón, Coalición Pro Calidad de Vida en Rincón, Liga Ecológica del Noroeste, Liga Ecológica de Rincón, Surfers' Environmental Alliance, Environmental Defense, Puerto Rico Sea Grant, Surfrider Puerto Rico, y Surfrider Foundation.



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ENVIRONMENTAL DEFENSE
finding the ways that work.



RMTPe-2
Nov 2003



Mark Rauscher
February 27, 2003